Remarks on the Taxonomic Placement of *Purpurellus* Jousseaume, 1880, with the Description of a New Species

(Gastropoda : Muricinae)

BY

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(Plates 26 and 27; 2 Text figures)

Among the mollusks obtained by the "Ariel Expedition" to western Mexico in 1960 is a remarkable new species of muricid gastropod. A single specimen was sorted from a trawling sample obtained in the Gulf of California by Dr. G. Bruce Campbell of Lynwood, California. Dr. Campbell has kindly permitted us to describe it and he generously deposited the holotype in the Los Angeles County Museum of Natural History. A second specimen, dredged in the Bay of Panama in 1935, was subsequently found in the vast molluscan collections of the Allan Hancock Foundation. The gastropods of this collection have been deposited on loan to the Los Angeles County Museum of Natural History by the University of Southern California. These specimens, both lacking soft parts, form the basis for the description.

We take pleasure in naming this interesting discovery in honor of Dr. James H. McLean, Curator of Mollusks, Los Angeles County Museum of Natural History, who recognized it in the Hancock Collection.

As a result of the present study, we have presented anatomical evidence that requires the placement of *Purpurellus* Jousseaume, 1880, in the muricacid subfamily Muricinae. Accordingly, we have re-assigned *Purpurellus* from the Ocenebrinae to the status of a subgenus in the muricid genus *Pterynotus* Swainson, 1833 (*sensu lato*).

Muricacea

Muricidae

Muricinae

Pterynotus Swainson, 1833

Pterynotus Swainson, 1833, explanation to plate 100, type species: *Murex pinnatus* Swainson, 1822 [= *Purpura alata* Röding, 1798], by SD, Swainson, 1833, explanation to plate 122. Vokes, 1964, plt. 14, plt. 37, figs. 24 (shell), 51 (radula), 63 (operculum) of *Purpura alata*.

Remarks: This genus has been traditionally placed in the subfamily Muricinae owing to the presence of a typically muricid shell and a muricoid operculum with a basal nucleus. As pointed out by Vokes (1964, p. 15), the radular central tooth of the type species, *Purpura alata*, differs from that commonly found in the Muricinae in having lost the smaller intermediate cusps of the central tooth. This condition may reflect a specialized feeding adaptation.

(Purpurellus) Jousseaume, 1880

Purpurellus Jousseaume, 1880, p. 335, type species: *Murex gambiensis* Reeve, 1845, by OD. Vokes, 1964,

p. 26, fig. 79 (shell of *Murex gambiensis*).
Triremis "Bayle MS" FISCHER, 1884, p. 641, type species: *Murex gambiensis* REEVE, 1845, by OD. THIELE, 1929, p. 288, fig. 313 (radula of *Murex gambiensis*).

Remarks: VOKES (1964, p. 26) recently afforded *Purpurellus* JOUSSEAUME, 1880, subgeneric rank in the genus *Pteropurpura* JOUSSEAUME, 1880, of the subfamily Tritonaliinae [= Ocenebrinae]. This generic and subfamilial placement was prompted largely by the similarity of the shell morphology of the type species, *Murex gambiensis* REEVE, 1845, with that of *Pteropurpura* (*s. s.*). She distinguished the shells of *Purpurellus* by their possession of a greatly widened siphonal canal and the extreme interruption developed in the varical fringe between the body whorl and the siphonal canal. VOKES noted that THIELE's (1929, p. 289) illustration of the radula of *Murex gambiensis* depicts muricine dentition and thus would require placement of *Purpurellus* in the Muricinae, but she questioned the authenticity of the figure and relied on the apparent affinity of the shell morphology with that of *Pteropurpura* for subfamilial assignment.

We have found, however, the radular dentition of *Murex pinniger* BRODERIP, 1833, an eastern Pacific representative of *Purpurellus*, to be muricine (Text figure 1) and to be reminiscent of THIELE's radular figure of *M. gambiensis* (Text figure 2). Both species are now determined to have muricine radulae, necessitating placement of *Purpurellus* in the subfamily Muricinae. We, therefore, have returned *Purpurellus* to the status of a subgenus in the genus *Pterynotus* (*sensu lato*), where it previously was assigned (EMERSON, 1960).

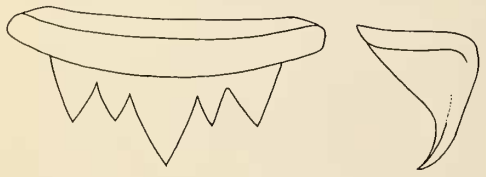

Figure 1

Pterynotus (Purpurellus) pinniger (BRODERIP, 1833)
Rachidian and lateral dentition, approximately ×300; specimen obtained by fishermen out of Guaymas, Sonora, Mexico; L. Thomas collection

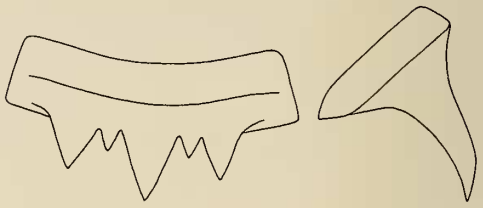

Figure 2

Pterynotus (Purpurellus) gambiensis (REEVE, 1845)
Rachidian and lateral dentition, greatly enlarged [after THIELE, 1929, p. 289, fig. 313]

The following Recent species are known to be referable to *Purpurellus:*
1. *Murex gambiensis* REEVE, 1845 [= ? *Murex osseus* REEVE, 1845], the type species, from the tropical eastern Atlantic.
2. *Murex pinniger* BRODERIP, 1833 [= *Centrifuga inezana* DURHAM, 1950, *fide* SHASKY & CAMPBELL, 1964, p. 116], from the tropical eastern Pacific.
3. *Pterynotus (Purpurellus)* ***macleani,*** spec. nov., described herein, from the tropical eastern Pacific.

In addition to the three living species, extinct species of *Purpurellus* are known from the Early Miocene of North Carolina, the Miocene of France, and the Pliocene of Italy (VOKES, *in litt.*). The available distributional data, therefore, indicate that the living representatives of this group are surviving, relict elements of the older Tertiary, west-Tethyan faunas. This would explain the present apparently discontinuous distribution, with species now living in the tropical eastern Atlantic and the eastern Pacific Oceans, but not occurring in the western Atlantic.

The status of *Centrifuga inezana* DURHAM, 1950, pp. 113, 114, plt. 26, figs. 1, 4 (here illustrated, Plate 27,

Explanation of Plate 26

Pterynotus (Purpurellus) macleani EMERSON & D'ATTILIO, spec. nov.
Figures 1, 2: Holotype, Loreto Channel, Baja California, Mexico, in 25 fathoms; ×2. (Note open siphonal canal and immature outer lip).
Figures 3, 4: Paratype, off Secas Island, Panama, in 12 fathoms; ×2. (Note closed siphonal canal and mature stage of apertural lip).

Pterynotus (Purpurellus) pinniger (BRODERIP, 1833)
Figures 5, 6: Bicolored juvenile specimen of 5 postnuclear whorls, Santa Rosalia, Isla San Marcos, Baja California, Mexico, Ben and Ruth Purdy collection; ×2.
Figure 7: Juvenile specimen of 6+ postnuclear whorls, Panama Bay, Panama, dredged, Lee and Helen Beils leg., *ex-* Ruth Craine collection; ×2.

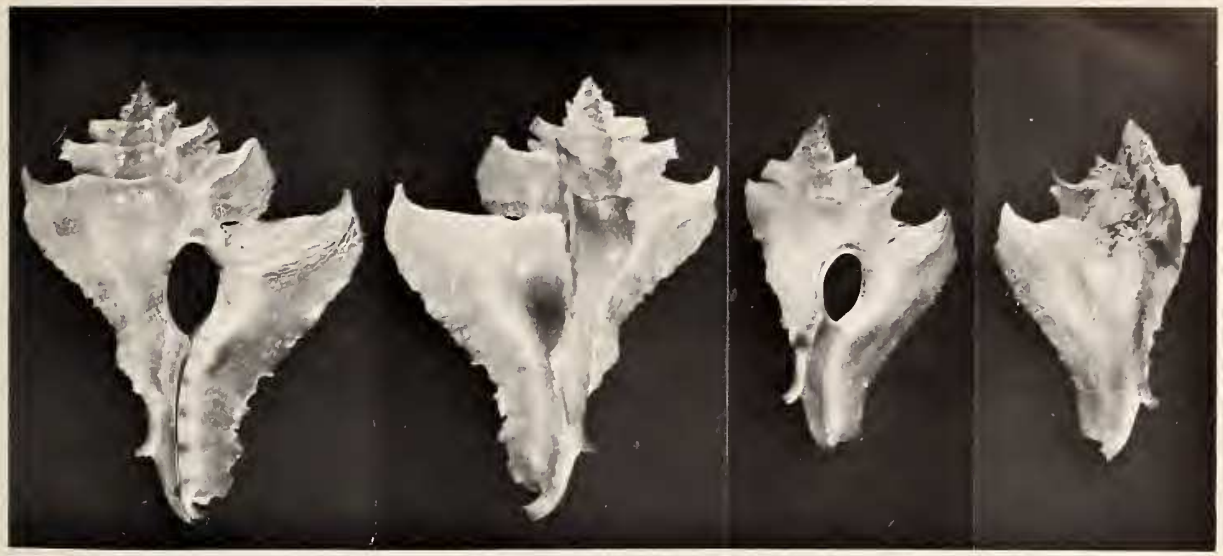

Figure 1 Figure 2 Figure 3 Figure 4

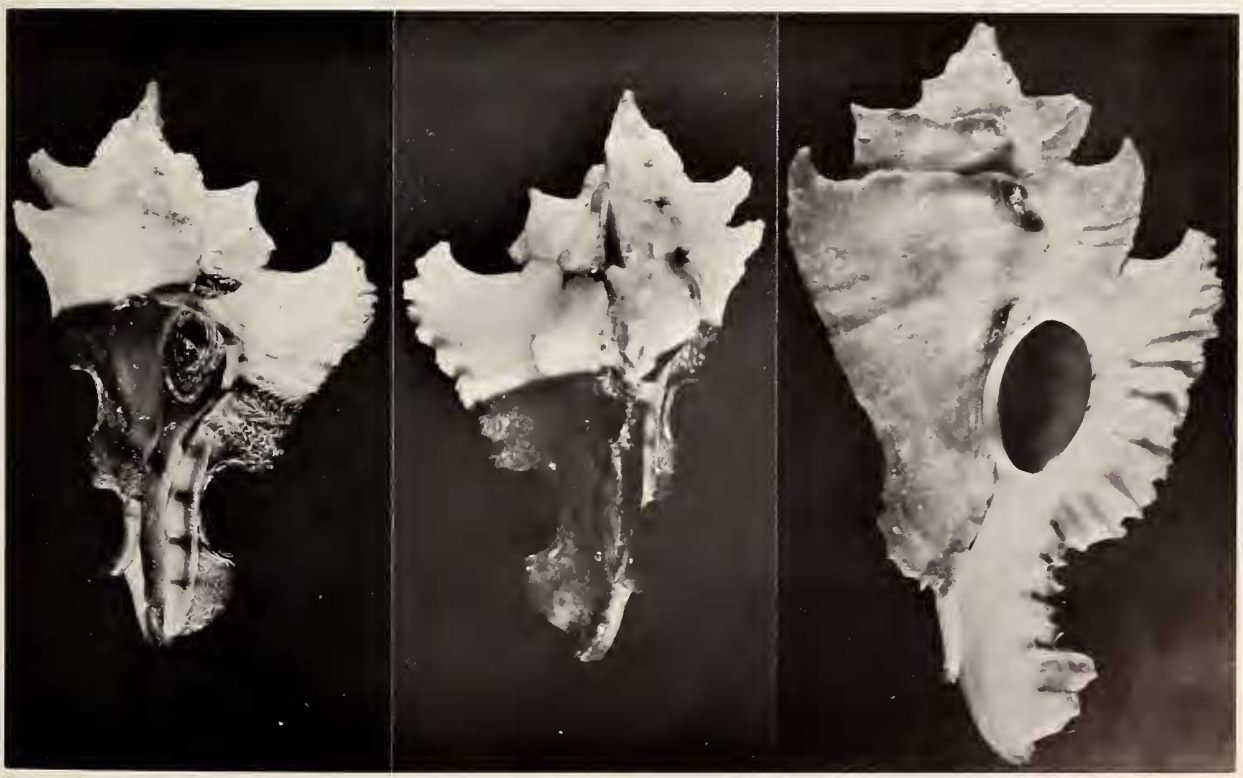

Figure 5 Figure 6 Figure 7